

REMARKS / ARGUMENTS

Reconsideration of this application, as amended, is respectfully requested. The following remarks are responsive to the Office Action mailed March 28, 2006.

Claims 1 – 6, 8 – 12, 14, and 16 – 28, for a total of 25 claims, are pending in the present application.

Claims 7, 13, and 15 have been canceled.

Claims 4, 14, 16, 19, and 21 have been amended. Claims 22 – 28 are new.

No new matter has been added; all amended claim language has support in the description.

**37 C.F.R. §1.75(c) Objections**

*re Claim 7*

The Examiner has objected to claim 7 under 37 C.F.R. §1.75(c) as being of improper dependent form, and Claim 7 also as being a duplicate of claim 6. Applicants accept the examiner's observation, and accordingly, claim 7 has been canceled.

**35 U.S.C. §102(e)Rejections**

*re Claims 1, 2, 4-7, 13-17 and 19-21*

The Examiner has rejected claims 1, 2, 4-7, 13-17 and 19-21 under 35 U.S.C. §102(e) as being anticipated by Chishti *et al.*, (U.S. Publication No. 2005/0244782). In making this rejection, the examiner asserts that the Chishti reference discloses a "method for moving teeth, comprising: moving a first tooth; and moving a second tooth while isolating the first tooth at a rest position". The applicant responds, respectfully, that language like this simply does not appear anywhere in Chishti.

This language is, in fact, taken directly from claim 1 of the present application, and is abundantly supported within the specification. Very similar language occurs in each of the original independent claims. Below, the applicant explains (a) what is at the heart of the present invention, (b) that the present invention is different than that of Chishti, and (c) that the nature of amendments made to the claims, such amendments made in response to comments of the examiner, and in order to more clearly and appropriately claim aspects of the invention.

*a. At the heart of this invention*

Within the specification, paragraphs 6, 7, and 88 through 102 and figures 10 and 11, as well as scattered language elsewhere, collectively focus on the aspects of the inventive method and system that are claimed in this application. These aspects include a temporal staging of tooth movement, such staging including both movement and absence of movement (*i.e.*, rest). This staging of movement and rest applies to single teeth and to groups of teeth, both contiguous and noncontiguous.

A tooth that is allowed to "rest" is a tooth that is not receiving application of force, such a tooth is considered to be "isolated" with respect to other teeth which are being subjected to a force. Paragraph 96 teaches that isolation or neutralization of a tooth (or teeth) occurs by "creating space (volume) around the tooth such that, even when the appliance is at a maximum deflection for other teeth's movements, no undesirable contact exists between this tooth and the appliance". Figures 10 and 11 both illustrate this method in a temporal snapshot manner as the method is applied to groups of teeth that are variously being moved, or being held at rest, in a neutral position.

The placing of a tooth or teeth in a neutral position is neither a passive occurrence nor the absence of an event. Rather, it is an active and integral part of the totality of the method of moving teeth, such method following from particulars of the design of the cavities in the series of appliances, and in the temporal sequence of such appliances. The resting occurs as the tooth or groups of teeth are "isolated" with respect to other teeth that are moving, and isolated from the forces that are moving the teeth. With regard to the appliance, the isolation is created by the design of the cavities being such that sufficient space or volume is present around the tooth (par 96, first sentence).

Applicants believe that the development represented by this invention, in fact, marks a significant clinical step toward improving the results of this aspect of orthodontial practice. There is experimental evidence (see King, cited in the IDS) that supports the concept that a better outcome results from a periodic cessation of tooth movement, which allows a consolidation and strengthening of newly remodeled bone.

*b. The present invention is different than that of Chishti*

As noted above, the claim elements "isolating" or "rest position" do not occur in Chishti at all. In a broader sense, the Chishti reference is not only silent on such aspects of the present

invention, such aspects are not even present by inference. Chishti speaks to repositioning of teeth through a series of intermediate and final stages, movement occurring in specific distances, and over various time intervals, but there is no description at all that speaks to some teeth being held still, while others are being moved. This being the case, there is also, obviously, no description related to a single tooth being held in neutral position, nor to groups of teeth being held in neutral position, nor to single teeth or groups of teeth being going through a cycle with periods of movement and periods of being held at rest.

Chishti does teach that some teeth may provide a "base" or "anchor region" for other teeth being moved. Paragraph 55 of Chishti, for example, states that "Often, only certain one(s) of the teeth will be repositioned while others of the teeth will provide a base or anchor region for holding the repositioning appliance in place as it applies the resilient repositioning force against the tooth or teeth to be repositioned". Teeth that provide a base or anchor can only serve in such capacity by absorbing force, based simply in the physics of the equal and opposite forces. More particularly, it's evident in paragraph 55, for example, where it is taught that "In some cases, however, it will be desirable or necessary to provide individual anchors on teeth with corresponding receptacles or apertures in the appliance 111 so that the appliance can apply an upward force on the tooth which would not be possible in the absence of such an anchor". Thus, by the description of Chishti, teeth being held in cavities of an appliance are in one of two states: either (1) being moved, or (2) being used as an anchor; in either case the teeth are being subjected to force.

The present application provides a novel and distinct third state, i.e., (3) a tooth occupying a cavity in an appliance in a resting position, *not* subjected to force, the absence of force being the result of the design of the cavity with sufficient space or volume such that collateral forces do not bear on the tooth.

Such forces as applied by an appliance without the benefit of the present invention may have the effect of causing unintended movement. Even in the absence of detectable tooth movement, however, such forces are inevitably conveyed to bone surrounding the tooth, where they impact the physiology of the bone. The present invention thus beneficially, isolates teeth and affected bone from such force(s), and thereby provides clinical benefit.

*c. Explanations of traverse and of amendments made to the claims*

Based on the explanation of the nature of the present invention provided above, and in particular contrast to Chishti, applicant respectfully traverses the examiners rejections of 1, 2, 4-7,

13-17 and 19-21, in that they all include the element of isolating the first tooth at a rest position, as indeed do all claims, that element being patentable over Chishti.

New claim 22, logically to follow claim 1, provides the limitation that the "isolating of the tooth in a rest position" (per claim 1) is "by relieving the tooth of any applied force". New claim 23, logically to follow new claim 22, provides the further limitation that "relieving the tooth of any applied force" (of claim 22) is "accomplished by creating space around the tooth, such that no undesirable contact is made".

Claim 4 has been amended for clarity and more appropriate antecedence back to claim 1 as well as forward to claims 5 - 12, in that "teeth" has been replaced with "first tooth" and "second tooth".

Claims 13 and 15 have been canceled because of awkward wording and awkward dependence on claim 1, and are basically replaced by new independent claim 24, logically to precede claim 14. Claim 24 includes the limitations of both claim 1 and new claim 24, but expands the singularity "tooth" to the potential plurality of "at least one", with regard to both the first tooth and the second tooth. Such a construction then allows an appropriately amended claim 14, and new claims 25, 26, and 27, which collectively capture the factorial combinations of first and second groups of teeth, each being either contiguous or noncontiguous.

Claim 16 to "a system" for moving teeth has been amended by making both first and second teeth potentially plural, as in method claim 24, and so as to include the limitation with respect to isolating at rest position, adding the limitation that isolating is by "relieving force applied", as in new claim 22 and 24. New claim 28, logically to follow claim 16, further provides the limitation that the relieving of force (of claim 16) is "accomplished by creating space around the tooth, such that no undesirable contact is made".

Claim 19 is amended simply to include the article "a" for "fabrication machine".

Claim 21 is amended such that the former first and second teeth are now both "at least one", and then by providing further limitations with regard to the modeling of teeth movement and teeth isolating.

Applicants believe that claim 1, in its original form, patentably differentiates from Chishti. However, as detailed above, amendments have been made to other claims, and new claims have been made in order to provide even better differentiation from Chishti, and in order to more clearly and appropriately capture specific aspects of the invention.

**35 U.S.C. §103(a) Rejections**

*re Claims 3, 8-12 and 18*

The Examiner has rejected claims 3, 8-12 and 18 under 35 U.S.C. §103(a) as being unpatentable over Chishti *et al.* The examiner asserts that the Chishti reference discloses the claimed invention except for duration being the periods of time as claimed (each of these claims includes a time-interval specific limitation), and that it would have been obvious to incorporate such time intervals in order to provide a variation of implemented treatment schedules..

Applicant responds to this 103a rejection by referring to the arguments above, which focus on traversing the 102(e) rejection of claim 1, 2, 4 - 17, and 19 - 21. In fact, however, the same argument would apply to all original claims, including 3, 8 - 12, and 18. These claims differ from the claims rejected by the examiner on 102(e) grounds by their inclusion of limitations with regard to time interval elements (*e.g.*, hourly, daily, weekly, *etc.*).

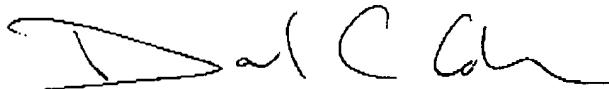
Applicant thus respectfully traverses the 103(a) rejections of these referenced claims, by asserting that inasmuch as the Chishti reference does not anticipate the common limitation throughout all original claims (*i.e.*, "moving a second tooth while isolating the first tooth at a rest position"), that these claims cannot possibly be further or alternatively obvious by their inclusion of an element specifying time intervals to further limit the claims, already limited by the element common to all claims.

CONDITION FOR ALLOWANCE

The applicants submit that the present application is now in condition for allowance. The Examiner is invited to contact applicants' agent, David C. Cohen, via telephone at (650) 328-8500, if it would further the allowance of the present application. The applicants further submit that no new matter has been added.

Please charge any deficiencies and credit any overpayments to Deposit Account No. 50-2638, referencing Attorney Docket No. AT-000221. Please charge any corresponding fee to Deposit Account No. 50-2638.

Respectfully submitted,



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